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EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/779,111	DAS ET AL.	
	Examiner	Art Unit	
	Ian N. Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 21-33* is/are rejected.

7)☒ Claim(s) *20 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 October 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. **Claim 20 and 34** are objected to because of the following informalities:

Per applicant remarks, page 12, the claim 20 has been rewritten in depended form as a new claim 34, yet claim 20 remains. Thus, **claims 20 and 34** are now **duplicate claims**, and it is suggested to cancel claim 20 since it has been rewritten into independent form as claim 34.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (U.S. 6,671,269) in view of Teder (US005544156A).

Regarding Claim 1 and 23, Ueno discloses a transmitter (see FIG. 2, a wireless network node) comprising of:

means for dividing (see FIG. 2, Data generation unit 107) a data packet (see FIG. 12A, packet data A) into a plurality of data sub-packets (see FIG. 12B, two user data blocks for packet A: each has a header A; note that the packet A is divided into two user data blocks; see col. 12, lines 60 to col. 13, lines 4; see col. 4, lines 61-67);

means for transmitting (see FIG. 2, Light-emitting element 112) a first control information (see FIG. 8, Slot permission area, which contains control information, in the control block is transmitted; see col. 6, lines 25-28) associated with one of the plurality of data sub-packets (see col. 7, lines 9-28, 41-54; note that the permission information, which is stored and carried in the slot permission area concerns with each user data channel block (i.e. ID, type of data, length)) over a time slot x (see FIG. 8, Slot permission area (i.e. permission time slot)) of a control channel (see FIG. 8, a Control block); see col. 6, lines 21-28; and

means for transmitting (see FIG. 2, Light-emitting element 112) the associated one of the plurality of data sub-packets (see FIG. 12B, user data block for packet A (with a header A), which is transmitted along with its slot permission area in a fame) over a time slot y (see FIG. 8, a data area (i.e. data time slot) which contains 240 data symbols) of a data channel (see FIG. 8, a Data block); see col. 7, lines 34-40.

Ueno does not explicitly disclose the data channel being parallel to the control channel. However, the data channel being parallel to the control channel is well known in the art. In particular, Teder teaches the data channel being parallel to the control channel (see col. 2, line 40-49; control channel is transmitted in parallel with the data channel). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide parallel transmission, as taught by Teder in the system of Ueno, so that it would provide coherent detection without introducing additional symbols or signals; see Teder col. 2, line 30-44.

4. Claims 1 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (U.S. 6,671,269) in view of Applicant Admitted prior art (APA).

Regarding Claim 1 and 23, Ueno discloses a transmitter (see FIG. 2, a wireless network node) comprising of:

means for dividing (see FIG. 2, Data generation unit 107) a data packet (see FIG. 12A, packet data A) into a plurality of data sub-packets (see FIG. 12B, two user data blocks for packet A: each has a header A; note that the packet A is divided into two user data blocks; see col. 12, lines 60 to col. 13, lines 4; see col. 4, lines 61-67);

means for transmitting (see FIG. 2, Light-emitting element 112) a first control information (see FIG. 8, Slot permission area, which contains control information, in the control block is transmitted; see col. 6, lines 25-28) associated with one of the plurality of data sub-packets (see col. 7, lines 9-28, 41-54; note that the permission information, which is stored and carried in the slot permission area concerns with each user data channel block (i.e. ID, type of data, length)) over a time slot x (see FIG. 8, Slot permission area (i.e. permission time slot)) of a control channel (see FIG. 8, a Control block); see col. 6, lines 21-28; and

means for transmitting (see FIG. 2, Light-emitting element 112) the associated one of the plurality of data sub-packets (see FIG. 12B, user data block for packet A (with a header A), which is transmitted along with its slot permission area in a fame) over a time slot y (see FIG. 8, a data area (i.e. data time slot) which contains 240 data symbols) of a data channel (see FIG. 8, a Data block); see col. 7, lines 34-40.

Ueno does not explicitly disclose the data channel being parallel to the control channel. However, the data channel being parallel to the control channel is well known in the art as recited by applicant. In particular, Applicant cited prior art teaches the data channel being parallel to the control channel (page 2, lines 3-10, and FIG. 8, labeled "**prior art**" where control

channel are data channel are parallel). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide parallel transmission, as taught by APA in the system of Ueno, so that it would allow the control information transmission to be controlled independently of the data packet transmission to increase its reliability; see APA page 2, line 5-6.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Proctor, JR (U.S. 2002/0013135A1).

Regarding claim 2, Ueno discloses the first control information indicates a manner of the associated one of the plurality of data sub-packets (see col. 7, lines 9-28, 41-54; note that the information which is stored and carried in the slot permission area concerns with each user data channel block ID, type of data, and/or length.)

Ueno does not explicitly disclose a manner of decoding.

However, the above-mentioned claimed limitations are taught by Proctor'135. In particular, Proctor'135 teaches the control information indicates a manner of decoding the associated one of the plurality of data packets (see page 1, paragraph 9-11; page 5, paragraph 56-65, note that the information in a preamble (i.e. control channel) contains the decoding information how a corresponding data payload of the data packet is to be processed).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Proctor'135, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a control information which indicates how a data packet is to be decoded, as taught by Proctor'135, since Proctor'135 states the advantages/benefits at page 2, paragraph 20 and page

3, paragraph 28 that it would provide a mechanism how a data packet to be processed for recapturing transmitted data when a signal data is directed to multiple receivers. The motivation being that by providing a packet decoding information in a preamble, it can optimized the use of limited wireless bandwidth since a transmission rate of the data payload can be variable and optimized depending on the operating parameter in the preamble.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and further in view of Ishikawa (U.S. 6,084,911).

Regarding claim 3, Ueno discloses channels and dividing the data packet into the plurality of data sub-packets as disclosed above in claim 1.

Ueno does not explicitly disclose channel coding the data packet.

However, the above-mentioned claimed limitations are taught by Ishikawa'911. In particular, Ishikawa'911 teaches coding the data packet prior to dividing the data packet (see col. 13, lines 28-65; col. 2, lines 20-25; col. 4, lines 50-55; note that the image data is coded before it is divided into fixed length packets).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Ishikawa'911, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of coding before dividing into the fixed length packets, as taught by Ishikawa'911, since Ishikawa'911 states the advantages/benefits at see col. 4, lines 45-55, see col. 7, lines 5-16 that it would reduce the delay of transmitting image data and provide

excellent data transmission. The motivation being that by coding the image data before dividing into the fixed size packets, it can reduce the delay by transmitting sequentially.

7. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Lewis (U.S. 6,601,209).

Regarding claim 4, Ueno discloses channels, the associated one of the plurality of data sub-packets, and dividing the data packet into the plurality of data sub-packets as disclosed above in claim 1.

Ueno does not explicitly disclose channel coding the data packet.

However, the above-mentioned claimed limitations are taught by Lewis'209. In particular, Lewis'209 teaches coding the data packet prior to transmission (see FIG. 1, BCH link coding 20 and RS link coding 21; see col. 3, lines 15-65; note that the video packet is coded by BCH and RS coders before transmitting).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Lewis'209, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of coding before transmitting the packets, as taught by Lewis'209, since Lewis'209 states the advantages/benefits at see col. 2, lines 30-52, see col. 3, lines 1-6 that it would detect and correct error in IP packets if each packet contains a relatively small number of errors. The motivation being that by coding the packet data before transmitting, it can provide a super quality of service for video data transmission since the error can be detected and corrected before transmitting.

Regarding claim 16, Ueno does not explicitly disclose channel coded prior transmission.

However, the above-mentioned claimed limitations are taught by Lewis'209. In particular, Lewis'209 teaches coding the data prior to transmission (see FIG. 1, BCH link coding 20 and RS link coding 21; see col. 3, lines 15-65; note that the video packet is coded by BCH and RS coders before transmitting).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Lewis'209, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of coding the data before transmitting the packets, as taught by Lewis'209, since Lewis'209 states the advantages/benefits at see col. 2, lines 30-52, see col. 3, lines 1-6 that it would detect and correct error in IP packets if each packet contains a relatively small number of errors. The motivation being that by coding the packet data before transmitting, it can provide a super quality of service for video data transmission since the error can be detected and corrected before transmitting.

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of well-established teaching in art.

Regarding claims 5 and 6, Ueno discloses wherein the control channel and the data channel are time synchronized to each other (see FIG. 12A-12C and see FIG. 13A-C; note that the data transmission is over time interval, and a control block channel is send after six data blocks. Thus, both control block channel and data block channel are synchronized since they are sending over the same time cycle; see col. 12, lines 46 to col. 13, lines 46).

Ueno does not explicitly disclose wherein the time slot x and the time slot y are synchronized to each other; or wherein the time slot x-z and the time slot y are synchronized to each other, and z is an integer.

However, the above-mentioned claimed limitations are taught by well-established teaching in art. In particular, well-established teaching in art teaches wherein the time slot x and the time slot y are synchronized to each other, or the time slot x-z and the time slot y are synchronized to each other, and z is an integer. Note that Ueno teaches both control and data channel blocks are synchronized each other. Ueno also discloses that a control channel block contains a slot permission area with a specific area location of 15 symbols (i.e. slot x) between SYNC bits and BCH bits, and the data channel block contains data area/slot with a specific location of 240 symbols (i.e. slot y) after SYNC bits. Thus, it is clear that when the control and data blocks are synchronized, a slot permission area and data area/slot with a specific location must be synchronized as well. Moreover, Ueno's slot permission area slot contains SYNC area (i.e. x – z slot) which also corresponds to a data area (i.e. slot y), and z= integer of 1. Thus, it is clear that when synchronizing two channel blocks, one must also synchronize the areas (i.e. x – z slot and y slot) within the channel blocks.

In view of this, having the combined system of Ueno and Teder and then given the teaching of well established teaching in art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of synchronizing each slot area, as taught by well established teaching in art. The motivation being that by synchronizing between two-slot

areas, it reduces the transmission delay and avoiding the synchronization mismatch since the channels are already synchronized.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Carlsson (U.S. 6,603,978).

Regarding claim 7, Ueno discloses wherein the time slot x of the control channel and the time slot y of the data channel as disclosed above in claim 1. Ueno further disclose the control information includes an indication of the associated one of the plurality of data sub-packets (see col. 7, lines 9-28, 41-54; note that the information, which is stored and carried in the slot permission area indicates or associates with each user data channel block (i.e. ID, type of data, length)).

Ueno does not explicitly disclose wherein the control channel and the data channel are not time synchronized to each other.

However, the above-mentioned claimed limitations are taught by Carlsson'978. In particular, Carlsson'978 discloses the time slot x (see FIG. 3, Frame F0) of the control channel (see FIG. 3, DCCH) and the time slot y (see FIG. 3, Frame F1) the data channel (see FIG. 3, DTC0) are not time synchronized to each other (see Abstract; col. 2, lines 25-45; note that control channels and at least on traffic channel unsynchronized to control channels).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Carlsson'978, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of unsynchronized channels/slots, as taught by Carlsson'978, since

Carlsson'978 states the advantages/benefits at see col. 2, lines 1-4 that it would no longer requiring synchronization between traffic channels and the control channel. The motivation being that by providing a time information assistance and not synchronizing, it can overcome the limitation of requiring synchronization between traffic and control channels/slots during active sessions.

10. Claims 8, 9, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Scholefield (U.S. 5,742,592).

Regarding claims 8 and 9, Ueno discloses transmitting a control information associated with one of the plurality of data sub-packets over a time slot x of the control channel; and transmitting the associated one of the plurality of data sub-packets over a time slot y of the data channel as disclosed above in claim 1.

Ueno does not explicitly disclose a second control information associated with a second of the plurality of packets over a time slot x+1 of the control channel; and the associated second of the plurality of packets over a time slot y+1 of the data channel.

However, the above-mentioned claimed limitations are taught by Scholefield'592. In particular, Scholefield'592 discloses transmitting a second control information (see FIG. 4, a second control information (i.e. priority) at control frame slot 7 within CCCH, common control channel, where the first control information at control frame slot 6) associated with a second of the plurality of data sub-packets (see FIG. 4, Down link or uplink traffic packets (i.e. segmented data packets, SDU) are related to the control channels; see col. 3, lines 55-65; the second traffic frame slot 7, where traffic frame slot 6 being a first) over a time slot x+1 (see FIG. 4, a second

control frame slot 7, where control frame slot x=6 being a first frame slot) of the control channel (see FIG. 4, CCCH/BCCH channel 405); see col. 4, lines 50 to col. 5, lines 5; and

transmitting the associated second of the plurality of data sub-packets over a time slot y+1 (see FIG. 4, a second traffic frame slot 7, where traffic frame slot y=6 being a first traffic frame slot) of the data channel (see FIG. 4, traffic channel 410 or 420);

wherein the first and second information are identical (see FIG. 4, the control information (i.e. priority) at control frame slot 6, and the control information at control frame slot 7 must be identical since they both belong to CCCH).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Scholefield'592, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of allocation the plurality of user traffic in accordance with the priority in the control channel in the frame slot, as taught by Scholefield'592, since Scholefield'592 states the advantages/benefits at see col. 2, lines 1-21, 55-66 that it would increase the error correction and throughput. The motivation being that by providing the user traffic priority information along with the traffic, it can increase the throughput and error correction since it allows the allocation of one or more channels according to the priority.

Regarding claim 11, Ueno discloses transmitting the first control information over a time slot x of control channel as disclosed above in claim 1.

Ueno does not explicitly disclose transmitting over a time slot p of another control channel.

However, the above-mentioned claimed limitations are taught by Scholefield'592. In particular, Scholefield'592 discloses transmitting the first control information (see FIG. 4, a first control information (i.e. priority) at control frame slot 12 within CCCH) over a time slot p (see FIG. 4, a control frame slot 12) of another control channel (see FIG. 4, a second CCCH channel 408); see col. 4, lines 50 to col. 5, lines 5.

In view of this, having the combined system of Ueno and Teder and then given the teaching of Scholefield'592, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a mechanism of allocation the plurality of user traffic in accordance with the priority information in the control channel in the frame slot, as taught by Scholefield'592, since Scholefield'592 states the advantages/benefits at see col. 2, lines 1-21, 55-66 that it would increase the error correction and throughput. The motivation being that by providing the user traffic priority information along with the traffic, it can increase the throughput and error correction since it allows the allocation of one or more channels according to the priority.

Regarding claim 12, Ueno discloses wherein the time slot x of the control channel as descried above in claim 1. Ueno further discloses the time slot x of the control channel and the time slot p (see FIG. 8, a Slot permission slot in the next control block) of the other control channel (see FIG. 12C, a next control bock) are time synchronized to each other (note that the data transmission is over time interval, and each control block channel is send after every six data blocks. Thus, both control blocks are synchronized since they are sending over the same time cycle; see col. 12, lines 46 to col. 13, lines 46. Ueno also discloses that a control channel block contains a slot permission area with a specific area location of 15 symbols (i.e. slot x)

between SYNC bits and BCH bits, and the data channel block contains data area/slot with a specific location of 240 symbols (i.e. slot y) after SYNC bits. Thus, it is clear that when the control and data blocks are synchronized, a slot permission area and data area/slot with a specific location must be synchronized as well.

In view of this, having the combined system of Ueno, Teder and Scholefield then given the teaching of well established teaching in art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Scholefield, for the same purpose and motivation as described above in claim 5 and 6.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Scholefield'592, as applied to claim 8 above, and further in view of Proctor'135.

Regarding claim 10, Ueno discloses the first control information indicates a manner of the associated one of the plurality of data sub-packets (see col. 7, lines 9-28, 41-54; note that the information which is stored and carried in the slot permission area concerns with each user data channel block ID, type of data, and/or length.) The combined system of Ueno and Teder and Scholefield'592 discloses the second control information indicates a manner (see FIG. 4, BCCH informational broadcast the information regarding the packet) of the associated one of the plurality of data sub-packets as described above in claim 8.

Neither Ueno nor Scholefield'592 explicitly discloses a manner of decoding.

However, the above-mentioned claimed limitations are taught by Proctor'135. In particular, Proctor'135 teaches the control information indicates a manner of decoding the

associated one of the plurality of data packets (see page 1, paragraph 9-11; page 5, paragraph 56-65, note that the information in a preamble (i.e. control channel) contains the decoding information how a corresponding data payload of the data packet is to be processed).

In view of this, having the combined system of Ueno and Teder and Scholefield'592, then given the teaching of Proctor'135, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Scholefield'592, for the purpose of providing a control information which indicates how a data packet is to be decoded, as taught by Proctor'135, since Proctor'135 states the advantages/benefits at page 2, paragraph 20 and page 3, paragraph 28 that it would provide a mechanism how a data packet to be processed for recapturing transmitted data when a signal data is directed to multiple receivers. The motivation being that by providing a packet decoding information in a preamble, it can optimized the use of limited wireless bandwidth since a transmission rate of the data payload can be variable and optimized depending on the operating parameter in the preamble.

12. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Nakano (U.S. 5,206,858).

Regarding claim 13, Ueno discloses wherein the first control information indicates the associated one of the plurality data sub-packets as disclosed above in claim 1.

Ueno does not explicitly disclose a new/continuation flag to indicate whether the associated one of the plurality packets is a beginning of a new data packet transmission or a continuation of a data packet transmission in progress.

However, the above-mentioned claimed limitations are taught by Nakano'858. In particular, Nakano'858 discloses wherein the control information includes a new/continuation flag (see FIG. 3, New Data Flag, NDF) to indicate whether one of the plurality data packets (see FIG. 2, ATM cell) is a beginning of a new data packet transmission or a continuation of a data packet transmission in progress (see col. 2, lines 48 to col. 3, lines 34; note that NDF indicates the beginning of new cell transmission).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Nakano'858, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a NDF in the header to indicate the beginning of new cell transmission, as taught by Nakano'858, since Nakano'858 states the advantages/benefits at see col. 1, lines 39-67 that it would make it possible to discriminate the boundary of the frame. The motivation being that by providing a NDF, it can increase the synchronization between the transmitter and the receiver since NDF provides the boundary.

13. Claims 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Bergenwall (U.S. 2002/0126710).

Regarding claims 14 and 15, Ueno discloses wherein the first control information indicates the associated one of the plurality data sub-packets as disclosed above in claim 1.

Ueno does not explicitly disclose wherein a sequence identifier to indicate a sequence of the associated one of the plurality data packets; and a user identifier to indicate a user to whom the associated one of the plurality of data packets is intended.

However, the above-mentioned claimed limitations are taught by Bergenwall'710. In particular, Bergenwall'710 discloses wherein the control information includes a sequence identifier (see FIG. 3, mini packet header comprises sequence number (seq#)) to indicate a sequence of the associated one of the plurality data sub-packets (see page 2, paragraph 34-39; note that a sequence number indicates the sequence number of mini packets); and

a user identifier (see FIG. 1, user's destination address within IP header) to indicate a user to whom the associated one of the plurality of data sub-packets is intended (see page 2, paragraph 34; note that it is well known that IP header contains a source and destination addresses).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Bergenwall'710, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a sequence number and destination address of the packet, as taught by Bergenwall'710, since Bergenwall'710 states the advantages/benefits at page 1, paragraph 4-6, page 2, paragraph 39 that it would provide a receiver of the IP packet to re-order delayed packets and detect lost packets. The motivation being that by sequence number, it can reduce the packet lost in the network since the packet can be reorder accordingly. Also, by utilizing the destination address, the packet can be routed to the destination user.

Regarding claim 17, Ueno discloses transmitting user specific flags (see FIG. 9, Destination Identification ID and Source Identification ID fields define a specific user data) over a time slot q (see FIG. 12A-B, a slot/area with the user header (i.e. header a, b, or ab)) to indicate one or more users to whom the associated one of the plurality of data sub-packets is intended

(see col. 6, lines 44-65, see col. 12, lines 46-67; note that user packet header includes the destination address of each user device).

Ueno does not explicitly disclose a user identity channel. However, the above-mentioned claimed limitations are taught by Bergenwall'710. In particular, Bergenwall'710 discloses transmitting user specific flags (see FIG. 1, user's addresses within IP header) over a user identity channel (see FIG. 1, IP header, which contains a user's address fields) to indicate one or more users to whom the associated one of the plurality of data packets is intended (see page 2, paragraph 34; note that it is well known that IP header contains a source and destination addresses).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Bergenwall'710, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a header with user address, as taught by Bergenwall'710, for the same purpose and motivation as stated above in claim 15.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of well-established teaching in art.

Regarding claim 18, Ueno discloses wherein user specific flags associated with users (see FIG. 9, Destination Identification ID and Source Identification ID fields relates to each user node) to whom the one of the plurality of data sub-packets are intended are set (see col. 6, lines 44-65, see col. 12, lines 46-67; note that user packet header includes the destination address of each user device, and the address are set for each user) and

user specific flags associated with users (see FIG. 9, Transaction label, retry code, priority, header CRC fields relate to each user node) to whom the one of the plurality of data sub-packets are not intended are set (see col. 6, lines 44-65, see col. 12, lines 46-67; note that user packet header includes Transaction label, retry code, priority, header CRC fields, which are set in the header, and they are not part of the user payload/data).

Ueno does not explicitly disclose wherein flag is set to one and flag is set to zero.

However, the above-mentioned claimed limitations are taught by well-established teaching in art. In particular, well-established teaching in art discloses flags set to 1 and flags set to 0. Note that it is well known in the art that the data flags or labels or fields can be set to logical one or zero for digital signal processor to perform various function. Ueno discloses the plurality of user specific fields in the header of the pluralities of user blocks. Each header is implemented with logical 1 and 0. Ueno also teaches dividing a packet into user blocks. Thus, it is clear that the user block with the specific header fields set to "1" are the data block with user data fill, and the user bock with specific header field set to "0" are the data block with a null data fill.

In view of this, having the combined system of Ueno and Teder and then given the teaching of well established teaching in art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing setting 1 and 0 to specific header in order to identify the user data or null data. The motivation being that by utilizing 1 and 0 in the field, it will enable and enhance the processor to process the function accordingly.

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Nakano'858, and further in view of well-established teaching in art.

Regarding claim 19, Ueno teaches transmitting the associated one of the plurality of data sub-packets as descried above in claim 1. Ueno further discloses wherein the user specific flags associated with users (see FIG. 9, Destination Identification ID and Source Identification ID fields relates to each user node) to whom the associated one of the plurality of data sub-packets are intended are turned on or set see col. 6, lines 44-65, see col. 12, lines 46-67; note that user packet header includes the destination address of each user device, and the address are set for each user).

Ueno does not explicitly disclose a flag is transmitted when one of the plurality of data packets is a first data packet or a last packet.

However, the above-mentioned claimed limitations are taught by Nakano'858. In particular, Nakano'858 discloses transmitting a flag (see FIG. 3, New Data Flag, NDF) to indicate whether one of the plurality data packets (see FIG. 2, ATM cell) is a beginning of a first data packet or a last data packet (see col. 2, lines 48 to col. 3, lines 34; note that NDF, which indicates the beginning of new cell, is transmitted).

In view of this, having the combined system of Ueno and Teder and then given the teaching of Nakano'858, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing a NDF in the header to indicate the beginning of new cell transmission, as taught by Nakano'858, since Nakano'858 states the advantages/benefits at see col. 1, lines 39-67 that it would make it possible to discriminate the boundary of the frame. The motivation being that by

providing a NDF, it can increase the synchronization between the transmitter and the receiver since NDF provides the boundary.

Neither Ueno nor Nakano'858 explicitly discloses wherein flag is set to one.

However, the above-mentioned claimed limitations are taught by well-established teaching in art. In particular, well-established teaching in art discloses flags set to 1. Note that it is well known in the art that the data flags or labels or fields can be set to logical one or zero for digital signal processor to perform various function. Ueno discloses the plurality of user specific fields in the header of the pluralities of user blocks. Each header is implemented with logical 1. Nakano'858 teaches the NDF flag, which can be set according to the payload data information. Thus, Ueno's header field can be implemented with NDF, which can be turn on by setting to logical 1.

In view of this, having the combined system of Ueno and Teder and Nakano'858, then given the teaching of well established teaching in art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Nakano'858, for the purpose of providing setting 1 to NDF field. The motivation being that by utilizing 1 in the NDF field, it will enable and enhance the processor to process the function accordingly.

16. Claims 21,22,31,32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder, and further in view of Moulsley (U.S. 2004/0082357).

Regarding claims 21 and 32, Ueno discloses the control channel and first control information as disclosed above in claim 1.

Ueno does not explicitly disclose the control channel is power controlled (see Moulsley'357, FIG 5, power P; see page 1, paragraph 10; page 2, paragraph 25-30; note that a control channel includes a power control information); and

means for adjusting a power (see FIG. 2, Mirocontroller 52 of the base station 50 and Power Control PC 68 of Mobile station 60 adjust the transmit power) of the means for transmitting the first control information (see FIG. 5, preamble 102) over the control channel (note that a preamble is transmitted over the control channel; see page 1, paragraph 7-10).

However, the above-mentioned claimed limitations are taught by Moulsley'357. In view of this, having the combined system of Ueno and Teder and then given the teaching of Moulsley'357, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the purpose of providing power controlled into the control channel, as taught by Moulsley'357, since Moulsley'357 states the advantages/benefits at page 1, paragraph 3-4, 9-10 it would provide a close loop power control. The motivation being that by power controlling information within a control channel, it can reduce the packet lost in the network since the packet can avoid too high or too low of transmit power between stations by adjusting/controlling the power.

Regarding claim 22 and 33, Ueno discloses the control channel and transmitting data packet as disclosed above in claim 1 and 21.

Ueno does not explicitly disclose receiving control channel quality feedback (see Moulsley'357 FIG. 3, Acknowledgement A 202-204) from a receiver (see FIG. 1, Rx, 54 or 64) to which the data packet is intended (see Moulsley'357 page 1, paragraph 7, page 2, paragraph

29-31; note that upon receiving preamble regarding the power, the receiver acknowledges correct receipt of power preamble).

However, the above-mentioned claimed limitations are taught by Moulsley'357. In view of this, having the combined system of Ueno and Teder and then given the teaching of Moulsley'357, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, for the same purpose and motivation as described above in claim 21.

Regarding claim 31, Ueno discloses wherein the transmitter is a base station (see FIG. 1, wireless network node 2, which is connected to satellite broadcasting receiver, thus is the base station for a satellite) belonging to a wireless communication system (see FIG. 1, a wireless network 1); see col. 3, lines 50-67.

17. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Lewis (U.S. 6,601,209).

Regarding claim 24, the combined system of Ueno and Teder and Moulsley'357 discloses the data packet or the plurality of data sub-packets as disclosed above in claims 1 and 21.

Neither Ueno nor Moulsley'357 explicitly discloses channel coding the data packet.

However, the above-mentioned claimed limitations are taught by Lewis'209. In particular, Lewis'209 teaches coding the data packet prior to transmission (see FIG. 1, BCH link

coding 20 and RS link coding 21; see col. 3, lines 15-65; note that the video packet is coded by BCH and RS coders before transmitting).

In view of this, having combined system of Ueno and Teder and Moulsley'357, then given the teaching of Lewis'209, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Moulsley'357, for the purpose of providing a mechanism of coding before transmitting the packets, as taught by Lewis'209, since Lewis'209 states the advantages/benefits at see col. 2, lines 30-52, see col. 3, lines 1-6 that it would detect and correct error in IP packets if each packet contains a relatively small number of errors. The motivation being that by coding the packet data before transmitting, it can provide a super quality of service for video data transmission since the error can be detected and corrected before transmitting.

18. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Scholefield (U.S. 5,742,592).

Regarding claims 25 and 26, the combined system of Ueno and Teder and Moulsley'357 discloses transmitting a control information associated with one of the plurality of data sub-packets over a time slot x of the control channel; and transmitting the associated one of the plurality of data sub-packets over a time slot y of the data channel as disclosed above in claim 1.

Neither Ueno nor Moulsley'357 explicitly disclose a second control information associated with a second of the plurality of packets over a time slot x+1 of the control channel; and the associated second of the plurality of packets over a time slot y+1 of the data channel.

However, the above-mentioned claimed limitations are taught by Scholefield'592. In particular, Scholefield'592 discloses transmitting a second control information (see FIG. 4, a second control information (i.e. priority) at control frame slot 7 within CCCH, common control channel, where the first control information at control frame slot 6) associated with a second of the plurality of data sub-packets (see FIG. 4, Down link or uplink traffic packets (i.e. segmented data packets, SDU) are related to the control channels; see col. 3, lines 55-65; the second traffic frame slot 7, where traffic frame slot 6 being a first) over a time slot x+1 (see FIG. 4, a second control frame slot 7, where control frame slot x=6 being a first frame slot) of the control channel (see FIG. 4, CCCH/BCCH channel 405); see col. 4, lines 50 to col. 5, lines 5; and

transmitting the associated second of the plurality of data sub-packets over a time slot y+1 (see FIG. 4, a second traffic frame slot 7, where traffic frame slot y=6 being a first traffic frame slot) of the data channel (see FIG. 4, traffic channel 410 or 420);

wherein the first and second information are identical (see FIG. 4, the control information (i.e. priority) at control frame slot 6, and the control information at control frame slot 7 must be identical since they both belong to CCCH).

In view of this, having the combined system of Ueno and Teder and Moulsley'357, then given the teaching of Scholefield'592, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Moulsley'357, for the purpose of providing a mechanism of allocation the plurality of user traffic in accordance with the priority in the control channel in the frame slot, as taught by Scholefield'592, since Scholefield'592 states the advantages/benefits at see col. 2, lines 1-21, 55-66 that it would increase the error correction and throughput. The motivation being that by

providing the user traffic priority information along with the traffic, it can increase the throughput and error correction since it allows the allocation of one or more channels according to the priority.

19. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Nakano (U.S. 5,206,858).

Regarding claim 27, the combined system of Ueno and Teder and Moulsley'357 discloses wherein the first control information indicates the associated one of the plurality data sub-packets as disclosed above in claims 1 and 21.

Neither Ueno nor Moulsley'357 explicitly a new/continuation flag to indicate whether the associated one of the plurality packets is a beginning of a new data packet transmission or a continuation of a data packet transmission in progress.

However, the above-mentioned claimed limitations are taught by Nakano'858. In particular, Nakano'858 discloses wherein the control information includes a new/continuation flag (see FIG. 3, New Data Flag, NDF) to indicate whether one of the plurality data packets (see FIG. 2, ATM cell) is a beginning of a new data packet transmission or a continuation of a data packet transmission in progress (see col. 2, lines 48 to col. 3, lines 34; note that NDF indicates the beginning of new cell transmission).

In view of this, having the combined system of Ueno and Teder and Moulsley'357, then given the teaching of Nakano'858, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and

Moulsley'357, for the purpose of providing a NDF in the header to indicate the beginning of new cell transmission, as taught by Nakano'858, since Nakano'858 states the advantages/benefits at see col. 1, lines 39-67 that it would make it possible to discriminate the boundary of the frame. The motivation being that by providing a NDF, it can increase the synchronization between the transmitter and the receiver since NDF provides the boundary.

20. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Scholefield'592 and Bergenwall (U.S. 2002/0126710).

Regarding claim 28, the combined system of Ueno and Teder and Moulsley'357 discloses control information indicate the associated one of the plurality data sub-packets as disclosed above in claims 1 and 21.

Neither Ueno nor Moulsley'357 explicitly disclose a time slot q (see Scholefield'592 FIG. 4, frame slot 2) of a communication channel (see FIG. 4, BCCH channel 409) parallel to the data or control channel (see FIG. 4, BCCH 409 is parallel to Traffic channel 410,420; see col. 4, lines 50 to col. 5, lines 5).

In view of this, having the combined system of Ueno and Teder and Moulsley'357, then given the teaching of Scholefield'592, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Moulsley'357, for the purpose of providing a mechanism of allocation the plurality of user traffic in accordance with the priority in the control/communication channel in the frame slot, as taught by Scholefield'592, since Scholefield'592 states the advantages/benefits at see col. 2, lines

1-21, 55-66 that it would increase the error correction and throughput. The motivation being that by providing the user traffic priority information along with the traffic, it can increase the throughput and error correction since it allows the allocation of one or more channels according to the priority.

Neither Ueno, Moulsley'357 nor Scholefield'592 explicitly disclose wherein a sequence identifier to indicate a sequence of the associated one of the plurality data packets.

However, the above-mentioned claimed limitations are taught by Bergenwall'710. In particular, Bergenwall'710 discloses wherein the control information includes a sequence identifier (see FIG. 3, mini packet header comprises sequence number (seq#)) to indicate a sequence of the associated one of the plurality data packets (see page 2, paragraph 34-39; note that a sequence number indicates the sequence number of mini packets).

In view of this, having the combined system of Ueno and Teder, Moulsley'357 and Scholefield'592, and then given the teaching of Bergenwall'710, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder, Moulsley'357 and Scholefield'592, for the purpose of providing a sequence number and destination address of the packet, as taught by Bergenwall'710, since Bergenwall'710 states the advantages/benefits at page 1, paragraph 4-6, page 2, paragraph 39 that it would provide a receiver of the IP packet to re-order delayed packets and detect lost packets. The motivation being that by sequence number, it can reduce the packet lost in the network since the packet can be reorder accordingly. Also, by utilizing the destination address, the packet can be routed to the destination user.

21. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Lewis (U.S. 6,601,209).

Regarding claim 29, the combined system of Ueno and Teder and Moulsley'357 discloses the first control information as disclosed above in claims 1 and 21.

Neither Ueno nor Moulsley'357 explicitly discloses means for channel coding.

However, the above-mentioned claimed limitations are taught by Lewis'209. In particular, Lewis'209 teaches means for coding the data packet prior to transmission (see FIG. 1, BCH link coding 20 and RS link coding 21; see col. 3, lines 15-65; note that the video packet is coded by BCH and RS coders before transmitting).

In view of this, having combined system of Ueno and Teder and Moulsley'357, then given the teaching of Lewis'209, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Moulsley'357, for the purpose of providing a mechanism of coding before transmitting the packets, as taught by Lewis'209, since Lewis'209 states the advantages/benefits at see col. 2, lines 30-52, see col. 3, lines 1-6 that it would detect and correct error in IP packets if each packet contains a relatively small number of errors. The motivation being that by coding the packet data before transmitting, it can provide a super quality of service for video data transmission since the error can be detected and corrected before transmitting.

22. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno in view of Teder and Moulsley'357, as applied to claims 1,21,22 above, and further in view of Bergenwall'710.

Regarding claim 30, Ueno discloses transmitting user specific flags (see FIG. 9, Destination Identification ID and Source Identification ID fields define a specific user data) over a time slot q (see FIG. 12A-B, a slot/area with the user header (i.e. header a, b, or ab)) to indicate one or more users to whom the associated one of the plurality of data sub-packets is intended (see col. 6, lines 44-65, see col. 12, lines 46-67; note that user packet header includes the destination address of each user device).

Neither Ueno nor Moulsley'357 explicitly disclose a user identity channel.

However, the above-mentioned claimed limitations are taught by Bergenwall'710. In particular, Bergenwall'710 discloses transmitting user specific flags (see FIG. 1, user's addresses within IP header) over a user identity channel (see FIG. 1, IP header, which contains a user's address fields) to indicate one or more users to whom the associated one of the plurality of data packets is intended (see page 2, paragraph 34; note that it is well known that IP header contains a source and destination addresses).

In view of this, having the combined system of Ueno and Teder and Moulsley'357, then given the teaching of Bergenwall'710, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Ueno and Teder and Moulsley'357, for the purpose of providing a header with user address, as taught by Bergenwall'710, for the same purpose and motivation as stated above in claim 15.

Allowable Subject Matter

23. **Claims 20 and 34** are objected in accordance with paragraph, but either one would be allowable if overcome the objection.

Response to Arguments

24. Applicant's arguments with respect to claim 1,19,21-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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